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It would be impossible within the limits of this review even to outline the valuable suggestions which the book contains for making the school a more efficient factor in preparing young people for citizenship. The reader may not agree with all of Professor Jenks's conclusions, but he cannot fail to be inspired by the spirit of these addresses and essays.

EDWARD E. HILL

HYDE PARK HIGH SCHOOL
Chicago

The Principles of Teaching, Based on Psychology. By EDWARD L. THORNDIKE. Pp. 293+xii. New York: A. G. Seiler. \$1.25.

That "teachers are born not made" contains so much truth that a great many men are skeptical as to the feasibility of really "making" teachers. Such men claim that normal schools, departments of education, and teachers' colleges serve mainly as a selective agency, discovering who are the "born teachers." This same class of men do admit, however, that some courses offered by these schools for teachers do contribute in a general way to the equipment for teaching: the history of education gives one a good orientation in school work; the principles of education furnish ideals; educational psychology may bring one into sympathy with the child in his development. This skepticism toward a science of teaching may account for our having only two first-class books (aside from the one under discussion) the central aim of which is to formulate some principles of teaching. The fact that little scientific study has been given this topic is a second reason for the scarcity of really valuable books on this subject.

Professor Edward L. Thorndike has given to the educational world a work on *The Principles of Teaching, Based on Psychology*. The author clearly shows himself in sympathy with a science of teaching. He believes that *facts* concerning physical activity, mental life, and human conduct may be so studied as to contribute principles of practical service in teaching. This scientific study he has made in both experimental psychology and actual school work. Throughout the book verifiable facts are dealt with rather than attractive opinions: these facts are practical in that they refer to the actual work of teaching.

Dr. Thorndike opens his study with this problem: "The need of education arises from the fact that *what is* is not what *ought to be*." To effect this change is the work of teaching; *how* to make the changes (determined by other studies) is the real issue. The answer to this question is sought in a consideration of the following topics: physical education, instincts, and capacities, apperception, interests, individual differences, attention, association, analysis, reasoning, responses of conduct, responses of feeling, motor expression, motor education, formal discipline. The principle running throughout the study is the psychological one: responses of intellect, feeling, or conduct depend upon the stimuli applied. The changes sought must, therefore, be secured by varying, under control, the stimuli occasioning the responses. In securing and directing attention, the common battle is between the stimulus the teacher gives and some competitor; the teacher's task is to outbid some rival.

Three characteristics of the work are prominent:

1. *Clearness.*—In his preface the author says: "The book demands of students knowledge of the elements of psychology;" and at the opening of most of the chap-

ters a "Preparatory" reference to the author's *Elements of Psychology* is given, expecting the student to first familiarize himself with the kindred topic in the *Elements of Psychology*. This would doubtless be helpful, but it is not at all necessary since the text is so simple and clear. The first paragraph on interests is typical: "When any situation arouses attention, that is, leads the mind to busy itself with the thing or idea or feeling, it is called interesting. The tendency to devote one's thought and action to a fact is called interest in it. The feeling of arousal, of mental zest, of being drawn to the fact, is called the feeling of interest."

2. *Directness*.—The work is not cumbered with repetitions and redundant phraseology. The topics are discussed briefly and pointedly. The opening of the second paragraph on interests is typical: "With the fact and feeling of interest education is concerned in two ways: First, it must be the aim of education to encourage and create desirable and to discourage and destroy undesirable interests. . . . Second, we depend upon interests to furnish the motives for the acquisition of knowledge and for the formation of right habits of thought and action."

3. *Concreteness*.—The author insists that neither he nor his readers be led away into abstract theories. To this end over one-third of the book is devoted to *exercises*, distributed at the close of each chapter. These are strictly concrete and practical, found in every schoolroom; e. g., "Name three interests which contribute to make pupils eager to know their marks. Which of these are desirable, and which are undesirable, interests?"

Two questions of adverse criticism must be raised: (1) Does not the work lack unity in the development of a central theme? The chapters are arranged very much as similar chapters in any work on general psychology. Thus each chapter seems a topic by itself, and thus fails to show the relation between interest and association, for example, in any one lesson with a class. The large number of exercises at the close of each chapter are given at random, rather than grouped for the purpose of bringing out more clearly leading thoughts. This lack of arrangement leads to answers on the basis of mere common-sense rather than scientific knowledge. (2) Does not the work answer much more the *what* than the *how*? In a closing chapter the author says: "The problem has been always, 'What must be done to get this or that particular response?'" It is insisted that good teaching derives interest in school work from the common instinctive interests in play, action, etc. But the method of doing this in the period of class work is not suggested.

In spite of these possible weaknesses, this book must be regarded as one of the very best of its kind. It is brimful of most valuable suggestions. The theoretical man is made more practical; the practical teacher is led to think more scientifically. Teachers may be very grateful to Professor Thorndike for this helpful work.

J. L. MERIAM

TEACHERS COLLEGE
University of Missouri

Exposition in Class-Room Practice. By THEODORE C. MITCHILL and GEORGE R. CARPENTER. New York: The Macmillan Co., 1906. Pp. viii + 373.

Many recent textbooks on English composition purporting to solve the much-advertised difficulties are merely freakish ideas put forth in an attractive form. Sometimes we admire the author for his ingenuity, occasionally we praise him for his industry,